

subsessili, rhachi ima basi articulata, squamis fuscis linearibus usque ad 3 mm. longis aspersa, foliolo apicali 13 cm. longo; pinnulis 20-25-paribus plerisque oppositis, infimis reductis 5 cm. longis, medialibus 12 cm. longis, 15 mm. latis, fere sessilibus, basi utrinque truncatis sed inaequalibus, latere acroscopico circiter 9 mm., basiscopico vix 5 mm. latis, apice in caudas 2 cm. longas 2-3 mm. latas haud abrupte contractis, ubique serratis, subcoriaceis, inferne pallidis; costa inferne deorsum paleis parvis angustissimis paucis praedita, venis simplicibus, 1.5-2.0 mm. remotis, sparsissime squamuliferis; synangiis 1 mm. a margine remotis, vix 2 mm. longis, squama inconspicua persistente subtensis; sporangia circiter 10-paribus.

Ihu, Vailala river, no. 1005, Feb. 19, 1926.

Conspicuous because of the bases of pinnules squarely truncate on both sides. I have fragmentary material of at least two other undescribed Papuan species, collected by Copland King. The genus seems to be rich locally in very distinct species.

Hymenophyllum longifolium van Aldervelt van Rosenburgh.

U-uma river headwaters, Eastern Division, alt. 450-600 m. no. 1467, May 18, 1926 (fronds pendulous from tree trunks).

This species was described from Celebes, the description applying satisfactorily to our specimens with the help of its author's English version showing that the stipe is winged *at least* in the upper part; this wing may be a full millimeter wide on each side. It is nearly related to *H. Junghuhnii*, the head of the receptacle widened to fully twice its length. It differs from that species in its very elongate fronds, broader wings on the rachises and costae, and shorter segments, which may be emarginate as described, or rounded. It may be suspected that the *H. dilatatum* reported in New Guinea by Brause (in Bot. Jahrb. LVI. 40 [1920]) with very long and narrow fronds, is really this species.

Trichomanes atrovirens (Presl) Kunze.

T. rhomboideum J. Smith, nomen nudum.

Cephalomanes rhomboideum v. d. B.

Owen Stanley range, between Mt. Brown and Mt. Clarence, no. 1482; Iwarere, no. 677; perhaps also Ihu, Vailala river, no. 973 (small and ill developed).

Not before reported from New Guinea. Distinguished from *T. javanicum* by the slightly enlarged mouth of the involucre and by the long, curved laciniae on the lower margin of the pinnae. Quite identical with Philippine specimens. Brause (in Bot. Jahrb. LVI. 35, 36 [1920]) has described two Papuan species as related to this, both apparently distinguishable by broader involucres.

Cyathea Brassii, sp. nova.

Caudice gracili teste lectore 6 m. alto et stipite paleaceo, ambobus ceterum ignotis; fronde 2 m. longa, fere tripinnata, rhachi fulva paleis

fulvis usque ad 1 cm. longis angustissimis brevissime castaneo-ciliatis ad bases nigras breves insidentibus mox deciduis ornata, inter quales minute pallide subdecidue arachnoideo-furfuracea, demum paleis abscissis spinulosa; pinnis medialibus 40 cm. longis, abrupte acuminatis, breviter (1 cm.) stipitulatis, rhachi purpureo-maculata, squamulis amorphis pallidis appressis aspersa, glabrescente; pinnulis sessilibus, utroque latere circiter 25, medialibus horizontalibus 6 cm. longis, 15 mm. latis, infra apices abrupte contractis, papyraceis, inferne pallidis haud glaucis, costa superne pilis debilibus rufis et pallidis haud dense pubescente, inferne squamulis sparsis pallidis amorphis obsita et praeci-que deorsum paleis nonnullis fere albis nitentibus 1 mm. longis lanceo-latis apices suas versus ciliatis ornata; segmentis utroque latere circiter 15, 3 mm. latis, patentibus, subfalcatis, obtusis, serratis, pilis paucis 0.5 mm. longis ciliatis, costula superne pilis paucis incurvatis usque ad 0.7 mm. longis obsita, inferne deorsum squamulis pallide fulvis integris elongato-bullatis valde apiculatis sat dense obsita; venulis circiter 12-paribus plerisque furcatis; soris costularibus circiter 7-paribus, parvis (circiter 0.7 mm. diametro), contiguis, paraphysatis, squamulis laceratis subtensis vel primo involucratis.

Aisa River, Eastern Division, no. 1421, May 15, 1926.—Nom. indig.: *Bunu-bunu*.

A species well characterized by its assortment of peculiar hairs and paleae; not very closely related to the wide-spread and common *C. contaminans*, in spite of their common possession of a so-called false indusium. Abortive sori consist of a cluster of scales, or of a rudiment surrounded by the scales, which as the sori develop, are normally pressed down flat, with only their tips protruding or entirely concealed.

***Dryopteris pseudostenobasis*, sp. nova.**

Rhizomate ignoto, stipite teste lectore 1 m. alto; fronde 130 cm. alta, 50 cm. lata, in apicem parvam pinnatifidam abrupte contracta, pinnis infimis paucis subremotis diminutis, ubique nuda, rhachi pallide fusca deorsum 4 mm. crassa; pinnis medialibus alternantibus, eodem latere rhacheos 3 cm. remotis sessilibus, subhorizontalibus, 25 cm. longis vix 15 mm. latis, sensim in caudam longam integram attenuatis, basin versus subattenuatis papyraceis, profunde pinnatifidis; segmentis 5–6 mm. longis, 3 mm. latis, apice rotundatis, integris, rectis, patentibus; venulis simplicibus, circiter 10-paribus, infimis plerumque anastomosantibus rarius solummodo infra sinus approximatis et parallelis; soris medialibus, circiter 9-paribus nudis et sine paraphysibus; sporis nigris.

Ihu, Vailala river, in rain forests, no. 1000, Feb. 19, 1926. The collector's notes read: "Grows in large masses. Leaves 6–7 ft. long. Lower 3 ft. of (stipe) without pinnae."

To the naked eye, this would pass perfectly for *D. stenobasis* C. Chr. That species, as already shown by the original collection, is quite variable in width of pinnae,—from 1 to 3 centimeters,—and in their contraction

at the base. It is constant in the presence of glandular paraphyses, probably in its minute, glandular indusium, and in the exceedingly minute pubescence of the nether surface, in all of which microscopic characters *D. pseudostenophylla* is different. Both are inconstant in the anastomosis of the lowest veinlets. Mettenius, *Phegopteris* und *Aspidium*, no. 233, described the nether surface of *D. stenobasis* as "sub lente minutissime glandulosa;" the spores are likely to make both species look that way.

***Dryopteris albo-ciliata*, sp. nova.**

Caudice erecto brevi, paleis castaneis 1 cm. longis anguste lanceolatis acuminatissimis plerisque minute pubescentibus immerso; stipite 25–30 cm. alto, gracili, stramineo, puberulo; fronde 35–45 cm. alta, 17 cm. lata, acuminata, bipinnatifida, rhachi straminea pilis albis aspersa; pinnis sessilibus valde acuminatis, infimis vix diminutis deflexis, medialibus horizontalibus 8.5 cm. longis, 1 cm. latis, basi hastulatis vel subauriculatis, herbaceis, utraque facie pilis albis ad costam et venas usque at 0.8 mm. longis ad laminam brevioribus obsitis et ciliatis, caudis serrulatis, alibi profunde pinnatifidis; segmentis 4 mm. longis, 2.5 mm. latis, obtusis, integris; venulis simplicibus, 6-paribus, infimis 1-paribus anastomosantibus; soris medialibus; indusiis orbiculari-reniformibus, 0.4 mm. latis, persistentibus, hirsutis haud glanduligeris, integris.

Basiatibu, alt. 450 m., on floor of rain forest, no. 566, Nov. 6, 1925.

Apparently a member of the great group of "*D. parasitica*," in spite of the absence of reduced basal pinnae, characterized within the group by the white hairs on all parts, including the indusia, and gradually long-acuminate pinnae.

***Polystichum lastreoides* Rosenstock in Fedde, Rep. Spec. Nov. ix. 425 (August, 1911).**

Dryopteris Kingii Copeland in Philip. Jour. Sci. vi. 73 (June, 1911), non C. Chr.

Dryopteris tamatana C. Christensen, Ind. Suppl. 40 (1913).

Brass, Aisa river, on creek banks, no. 1422, May 15, 1926.

My description of this species was based on a specimen of King, no. 149, which had lost its indusia. Rosenstock's was based on King no. 194 and described with "indusio persistente, coriaceo, aterrimo, exacte rotundato-peltato, margine eroso-fimbriata." Mr. King later sent me a frond of his no. 194 and additional material of no. 149, bearing indusia. The two are absolutely identical. The indusia are peltate. On my specimens of both of King's numbers and on Brass's plant they are brown, sometimes approaching black, and perfectly entire.

These indusia make the plant a *Polystichum*, by definition, and Rosenstock ascribed it to the group of *P. varium*. In spite of the indusia, I do not believe that it belongs in this genus.

***Tectaria Weinlandii* (Christ), comb. nov.**

Aspidium Weinlandii Christ in Bull. Herb. Boiss. ser. 2, i. 453 (1901).

Laloki river, no. 541, Oct. 31, 1925.

Larger than the type and with several lateral pinnae, and the indusia fairly persistent; identical with a specimen received under this name from Dr. Rosenstock, Fil. novoguinenses exsic., no. 184, leg. Bamler.

It is related to the common and variable *T. crenata* Cav., and to *T. papuana* Copel. A single frond from the Owen Stanley range, alt. 1050 m., Brass, no. 1480, is intermediate between *T. crenata* and *T. Weinlandii*.

Tectaria craspedocarpa, sp. nova.

Sagenia; rhizomate paleis linearibus atrocastaneis 7 mm. longis integris vestito; stipite usque ad 35 cm. alto, gracili, atropurpureo, nitido, sub lente minute puberulo; fronde trifida basi late cordata vel trifoliata cum foliolo mediali trilobato basi cuneato, usque ad 25 cm. longa, 20 cm. lata, superne costa et inferne tota fronde minute puberula, papyracea, lobis acuminatis, margine integra vel subundulata, lobo, segmento vel foliolo laterali quoque basiscope acuta et ramo minore praedita; venatione conspicua more Sageniae reticulata; soris magnis (1.5 mm. latis) in lineam fere marginalem instructis, indusio orbiculari-reniforme, integro, persistente.

Laloki river, alt. 450 m., in damp soil under rocks near river, no. 557, Oct. 31, 1925.

Except for the position of the sori, this resembles Malayan specimens called *Aspidium latifolium*, but is not very nearly related to Forster's Polynesian plant. Only one fruiting frond was collected; it has a simple, lobed frond, nearly 20 cm. wide, with the middle segment deformed. The sori form a row almost entirely around it, without a sorus elsewhere.

Asplenium squamuligerum (Rosenst.) Hieronymus in Bot. Jahrb. LVI. 147 (1920), as to the description.

? Iawarere, alt. 300 m., on rocks, no. 671, Nov. 22, 1925.

In dealing with the Mindanao fern, *Athyrium Ramosii* Copeland (in Philip. Jour. Sci. xxxviii. 140 [1929]) construed as this species by Hieronymus in error, I overlooked the publication of *A. squamuligerum* cited above. The Brass material now in hand conforms to the descriptions. It and the Mindanao species have a remarkable superficial resemblance, although most certainly not nearly related, Brass' plant being a true *Asplenium*.

If this were the whole story, it would be one more illustration of the accident which sometimes befalls even the best collectors,—the confusion of superficially similar plants. This remains barely possible, however; for, on the heels of the Brass collection, I have received from Dr. Rosenstock a good specimen of Keysser's no. 228, the type collection of "*A.*" *squamuligerum*, and this specimen is an unmistakable *Athyrium*.

Following the policy explained in the publication of *A. Ramosii*, of close specific discrimination in this group, I continue to regard **Athyrium**

squamuligerum (Rosenst.: Hieron.) Copeland, n. comb., and *A. Ramosii* as distinct species, the former being smaller, more finely dissected but less toothed. The apical segments of the pinnae, as represented here, are not entire, but their teeth are far less conspicuous than those of *A. Ramosii*.

Brass' plant may be new; or it may be a very reduced form of a known *Asplenium*.

***Dennstaedtia erythrorachis* Christ.**

U-uma river headwaters, alt. 450 m., no. 1512 (large fern in river bottom).

This is exactly the plant already known from Papua by this name. It is thinner than the Mindanao plant so identified by Christ, and has relatively broader pinnules and smaller sori.

***Lindsaya sessilis* Copeland.**

Ihu, Vailala river, scandent in rain forest, no. 1077.

This collection includes fronds twice as large as those of the type, probably reaching a length of 45 cm. and a width of 5.5 cm., and with stipes about 1 cm. long. The smaller fronds are perfectly typical.

***Humata tenuis* Copeland.**

U-ume river headwaters, alt. 450-600 m., creeping on fallen logs, no. 1465.

The lamina is less contracted than that of the type collection, i. e., the segments are broader.

***Cyclophorus aglaophyllus*, sp. nova.**

Rhizomate 6 mm. crasso, paleis atrocastaneis supra basin 0.5 mm. latam acicularibus densissime vestito; stipitibus caespitosis validis triangularibus superne valde sulcatis 5-15 cm. altis; fronde 60-75 cm. alta, ca. 5 cm. lata, acuminata, deorsum sensim longe attenuata, coriacea superne primo albo-lanosa in vetustate glabra laete castanea, inferne paleis primo pallidis tum demum obscuris inter quales multis cum spina centrali atropurpurea 0.3 mm. longa praeditis vestita; costa valida superne plana v. sulcata, inferne carinata; venis perconspicuis; venulis immersis in reticulationem inconspicuam compactam more *Tectariae* anastomosantibus; soris minutis, partem superiorem frondis omnino oltegentibus.

Ibelva, Vailala river, no. 1143, March 13, 1926.

A very near relative of the Philippine *C. splendens* from which it is distinguished by much firmer texture, more stipitate fronds, narrower fronds in the case of those seen, and in having the spines from the middle of the scales less than half as long but identical in type.

***Cyclophorus stellatus*, sp. nova.**

C. adnascenti affinis squamulis stellatis densioribus et persistentioribus distinctus, statura minore, rhizomate late repente, 1 mm. crasso, paleis

appressis ovato-lanceolatis 1.5 mm. longis acuminatis atrocastaneis cum puncto fixationis nigro margine albida in vetustate perdita vestito; stipitibus sese 1-2 cm. remotis, ad phyllopodia circiter 1.5 mm. alta articulatis, frondium sterilium 5-10 mm., fertilium 3-4 cm. longis; fronde sterili 2-5 cm. longa, 4-7 mm. lata, acuta v. obtusa, deorsum angustata, coriacea, primo ubique squamulis stellatis densissime vestita in vetustate extrema solummodo superne glabra punctulis nigris aspersa, inferne subglabra, venis omnino occultis; fronde fertili lineari usque ad 10 cm. longa, 5 mm. lata, quam sterilis persistentius squamulosa, ubique basi valde angustata excepta sorifera, soris 0.6-0.8 mm. latis, inter costam gracilem et marginem circiter 4-seriatis.

Territory of New Guinea, Friedrich-Wilhelmshafen, on coconut trunks, *W. A. Setchell*, s. no., March 1904 (type in Herb. Univ. Calif., no. 71391); also Territory of Papua, U-uma River headwaters, *L. J. Brass*, no. 1473.

C. adnascens is common on coconut trunks well throughout the eastern tropics. It varies widely in size and shape of fronds; but almost always its sterile fronds are larger than those of *C. stellatus*, and always relatively broader and more rounded, and more promptly glabrescent; and its fertile fronds, commonly broader throughout, are almost always broadest and sterile near the base. In another direction, *C. stellatus* shows affinity to *C. rupestris*, and thus to *C. dispar*.

Cyclophorus dimorphus, sp. nova.

Rhizomate late repente fere 2 mm. crasso, duro, paleis vel relictis palearum appressis lanceolatis nigris anguste albide marginatis et ciliatis persistentibus vestito; stipitibus vix 2 cm. inter sese distantibus, ad phyllopodia 2-4 mm. longa articulatis, superne sulcatis, frondium sterilium 2-3 cm., fertilium 3-5 cm. longis, sursum alatis; fronde sterili circiter 6 cm. longa, 2 cm. lata, basi cuneata, apice late rotundata, rigide coriacea, utraque facie paleis minutis albidis stellatis sparsis et inconspicuis persistentibus praedita; costa inferne deorsum conspicua apicem versus occulta, venis omnino immersis; fronde fertili 15-20 cm. longa, 1 cm. lata, explanata sed in speciminibus convoluta et deinde vix 5 mm. lata, obtusa, basi excepta soris circiter 1 mm. latis dense oblecta, costa inferne conspicua, gracili.

Lower Mori river, on exposed rocks at river mouth, no. 1575, May 28, 1926.

Nearly related to the wide-spread and variable *C. adnascens*, from which the persistent though inconspicuous pubescence of both surfaces distinguishes it; it is also peculiar in having larger and more broadly rounded sterile fronds than are usual in that species. It may be near to *C. Ledermanni* Brause, but that is described as having the sterile fronds densely pilose beneath, the apex abruptly contracted to a short apex, and the stipes winged to the base. It is probably closer to the little-known *C. pachydermus*, and like it in having rather large sori, for